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EXAMINER

COPPINS, JANET L

ART UNIT PAPER NUMBER

1626

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,869

Applicant(s)

SHAYMAN, JAMES A.

Examiner

Janet L. Coppins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-22, 24-30 and 32-36 is/are pending in the application.
- 4a) Of the above claim(s) 6-10, 12-22, 24-30, 32-34 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

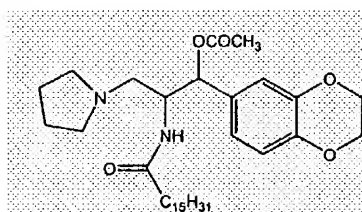
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DETAILED ACTION

Claims 1-10, 12-22, 24-30 and 32-36 pending in the instant application.

Election/Restrictions

1. Applicants' election **with** traverse of Group I, claims 1-5, and 35 (in part) drawn to compounds according to claim 1 wherein R3 is pyrrolidine, and specific compound of



In the response filed September 23, 2004, is acknowledged.

2. The traversal is on the grounds that A) the Restriction is to a generic claim and not a Markush group, B) the prior amendments have not increased the burden of search, and C) the Restriction is contrary to the policy of compact prosecution.

Regarding Applicants' argument "A" above, this is not found persuasive because the present situation, concerning compounds of the formula of claim 1 wherein R1 can be an aromatic structure, alicyclic, branched aliphatic, or linear aliphatic, R2 is any aliphatic chain of 10-18 carbons, R3 is any tertiary amine, and R4 is any hydrolysable group, involves the so-called "Markush Practice", wherein a single claim defines **alternatives** (chemical or non-chemical) and is governed by Section 803.02 of the MPEP. The Examiner would like to direct Applicants' attention to the following subsection:

"This subsection deals with Markush-type generic claims which include a plurality of alternatively usable substances or members. In most cases, a recitation by enumeration is used because there is no appropriate or true generic language. A Markush-type claim can include independent and distinct inventions. This is true where two or more of the members are so unrelated and diverse that a prior art reference anticipating the claim with respect to one of the members would not render the claim obvious under 35 U.S.C. 103 with respect to the other member(s). In applications containing claims of that nature, the examiner may require a provisional election of a single species prior to

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examination on the merits. The provisional election will be given effect in the event that the Markush-type claim should be found not allowable. Following election, the Markush-type claim will be examined fully with respect to the elected species and further to the extent necessary to determine patentability. If the Markush-type claim is not allowable over the prior art, examination will be limited to the Markush-type claim and claims to the elected species, with claims drawn to species patentably distinct from the elected species held withdrawn from further consideration."

Furthermore, the rule of thumb governing improper Markush claims is that if a prior art reference anticipates the Markush claim under 35 U.S.C. 102(b) with respect to one alternative (i.e. claim I wherein R¹ is phenyl) and does not render obvious the same claim with respect to another member (i.e. claim I wherein R¹ is a C₅ alkyl group) than the restriction is considered proper.

Furthermore, Applicants argument is not found persuasive because the present situation involving the so-called "Markush Practice", wherein a single claim defines alternatives (chemical or non-chemical) is governed by MPEP 803.02 (see above). However, in this special situation, the instant application has been filed under 35 U.S.C. III(a), so that the PCT lack of unity rules do not apply, yet the requirement of unity of invention of compounds included within a Markush group according to MPEP 803.02 applies as follows:

- (i) When the Markush grouping is for alternatives of chemical compounds, they shall be regarded as being of a similar nature where the following criteria are fulfilled:
 - (A) all alternatives have a common property or activity, AND
 - (B)
 - (1) a common structure is present, i.e. a significant structural element is shared by all of the alternatives, OR
 - (B)
 - (2) in cases where the common structure cannot be the unifying criteria, all the alternatives belong to a recognized class of chemical compounds in the art to which the invention pertains.
- (ii) In paragraph (i)(B)(1), above, the phrase "significant structural element is shared by all the alternatives" refers to cases where the compounds share a common chemical structure which occupies a large portion of their structures, or in case the compounds have in common only a small portion of their structures, the commonly shared structure constitutes a structurally distinctive portion in view of the existing prior art. The structural element may be a single component or a combination of individual components linked together.
- (iii) In paragraph (i)(B)(2) above, the phrase "recognized class of chemical compounds" means

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that there is an expectation from the knowledge in the art that members of the class will behave in the same way in the context of the claimed invention. In other words, each member could be substituted one for the other, with the expectation that the same intended result would be achieved.

(iv) The fact that the alternatives if a Markush grouping can be differently classified shall not, taken alone, be considered to be justification for finding of a lack of unity of invention.

Instantly, (i)(A) is met because the Applicants have claimed that all the alternatives have a common utility, i.e. anti-tumor activity. However, the unity of invention breaks down because neither of the (i)(B) criteria is met.

(i)(B)(1) is not met because the only structural element specifically shared by all the alternatives is the central core, the methoxy-propyl acetamide structure (variables excluded), which is not a "significant structural element" because the structural element is not distinctive in view of the existing prior art, i.e. it is not novel over any compound containing a methoxy-propyl acetamide linkage.

(i)(B)(2) is not met because all the alternatives do not belong to a recognized class of chemical compounds. There is no expectation in view of the chemical arts that a substitution of each member, one for the other as instantly claimed, would result in the same intended result. For example, the substitution of a phenyl at the R⁴ moiety and the substitution of a branched group at the R¹ moiety would result in a different class of chemical compounds as the resultant compounds would be useful as collagenase inhibitors (please refer to the attached CAPLUS listing) whereas the elected species of compounds (i.e. Structural Formula "A") are useful as anti-tumor agents.

Since the lack of unity criteria under Markush Practice is a two prong test, and since one of the prongs, (i)(B)(1) or (i)(B)(2), cannot be established, unity of invention is lacking and the holding of lack of unity for Markush groups is proper and is maintained.

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Applicants also contend that it is improper for the Patent and Trademark Office to require a restriction within a single claim. However, Section 121 provides the Commissioner of Patents and Trademarks with the authority to restrict applications to several claimed inventions when those inventions are found to be independent and distinct. In the instant application, the Examiner has determined that several independent and distinct inventions are claimed in the application.

Regarding arguments "B" and "C" above, the Applicants' amendments to the existing claims and the new claims present subject matter that was not originally examined, which change the scope of the claims and require separate searches from those originally performed. Since 37 CFR 1.142(a) provides that restriction is proper at any stage of prosecution up to final action (please refer to MPEP 811.02):

811 Time for Making Requirement

37 CFR 1.142(a), second sentence states: "[i]f the distinctness and independence of the invention be clear, such requirement will be made before any action upon the merits; however, it may be made at any time before final action in the case at the discretion of the examiner."

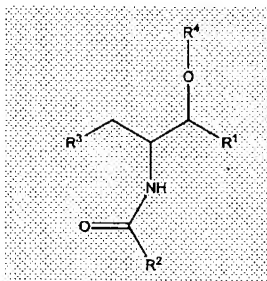
Therefore the pending restriction requirement is proper.

Status of the claims

3. Claims 1-10, 12-22, 24-30 and 32-36 are pending in the application. Claims 6-10, 12-22, 24-30, 32-34, and 36, as previously stated, are currently withdrawn from further consideration as being drawn to non-elected inventions. The withdrawn subject matter is patentably distinct from the elected subject matter as it differs in structure and element and would require separate search considerations. In addition, a reference that anticipates one group, would not necessarily render obvious another group.

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The scope of the elected subject matter is as follows: compounds according to the formula :



as depicted in claim I, wherein R¹ and R² are as defined, R³ is pyrrolidine, and R⁴ is as defined.

As a result of the election and the corresponding scope of the invention identified supra, the remaining subject matter of claims I, 3-5, and 35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to non-elected inventions (i.e. wherein R³ is not pyrrolidine). The withdrawn compounds contain varying functional groups such as azetidine, piperidine, morpholine, etc which are chemically recognized to differ in structure and function. This recognized chemical diversity of the functional groups can be seen by the various classification of these functional groups in the U.S. Classification system, i.e. class 540 (azetidine), class 544 (morpholine), class 546 (piperidine), etc. Therefore the subject matter which are withdrawn from consideration as being non-elected differ materially in structure and composition and have been restricted properly since a reference which anticipates the elected subject matter would not even render obvious the withdrawn subject matter and the fields of search are not coextensive.

4. Regarding Applicants' request for Rejoinder: the examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the

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provisions of MPEP § 821.04. Process claims that depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

5. Since the elected product claims have not yet been found allowable (they contain non-elected subject matter as well as pending 35 U.S.C. 112 rejections), the process claims will not yet be rejoined.

Claim Rejections - 35 USC § 112

6. *35 U.S.C. 112, first paragraph rejections*

(a) Claims 11, 23, and 31 previously rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure that is not enabling. In view of the cancellations of said claims, the Examiner withdraws the rejections.

7. *35 U.S.C. 112, second paragraph rejections*

(a) Claim 1 previously rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to define the recited “hydrolysable groups.” In view of Applicants’ amendatory changes, the Examiner withdraws the rejections to the claim.

(b) Claim 3 previously rejected for reciting the phrase “...wherein n is **at least 1**...” yet fails to set an upper limit for the value of n. Applicants argue that there is no ambiguity or indefiniteness in defining a chemical structure using an open-ended range, however the functional language “at least” has been found unacceptable in numerous cases, including Petrolite Corp. v. Watson, Comr. Pats., 113 USPQ 248. Applicants’ arguments are not persuasive and the Examiner maintains the rejection to the claim.

(c) Claims 11, 23, and 31 previously rejected under 35 U.S.C. 112, second paragraph. In view of the cancellations of said claims, the indefiniteness rejections are withdrawn.

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(d) Claims 2, 4, 5, and 35 rejected under 35 U.S.C. 112, second paragraph, as being dependent on base claims that stand rejected under 35 U.S.C. 112, second paragraph.

Conclusion

8. In conclusion, claims 1-10, 12-22, 24-30, and 32-36 are pending. Claims 6-10, 12-22, 24-30, 32-34, and 36 are currently withdrawn. Claims 1-5 and 35 stand rejected.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Coppins whose telephone number is 571.272.0680. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571.272.0699. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Janet L. Coppins
December 23, 2004



Joseph K. McKane
SPE, Art Unit 1626